

Code Review Checklist - Java

1. Specification / Design

- ☒ Is the functionality described in the specification fully implemented by the code?
- ☒ Is there any excess functionality in the code but not described in the specification?

2. Initialization and Declarations

- ☒ Are all local and global variables initialized before use?
- ☒ Are variables and class members of the correct type and appropriate mode
- ☒ Are variables declared in the proper scope?
- ☒ Is a constructor called when a new object is desired?
- ☒ Are all needed import statements included?
- ☒ Variable names are spelled correctly and consistently.
- ☒ Make sure that primitive data types are not set to null or empty
- ☒ Is 'static' keyword used correctly?

3. Method Calls

- ☒ Are parameters presented in the correct order?
- ☒ Are parameters of the proper type for the method being called?
- ☒ Is the correct method being called, or should it be a different method with a similar name?
- ☒ Are method return values used properly? Cast to the needed type?
- ☒ When calling a method that has a return value, be sure to use the return value properly.

4. Arrays

- ☒ Are there any off-by-one errors in array indexing?
- ☒ Can array indexes ever go out-of-bounds?
- ☒ Is a constructor called when a new array item is desired?
- ☒ Are array declarations syntactically correct?
- ☒ Are the row and column being indexed in the right order for a 2D array

5. Object Comparison

- ☒ Are all objects (including Strings) compared with "equals" and not "=="?

6. Output Format

- ☒ Are there any spelling or grammatical errors in displayed output?
- ☒ Is the output formatted correctly in terms of line stepping and spacing?

7. Computation, Comparisons and Assignments

- ☒ Do all statements end with a semicolon?
- ☒ Check order of computation/evaluation, operator precedence and parenthesizing
- ☒ Can the denominator of a division ever be zero?
- ☒ Is integer arithmetic, especially division, ever used inappropriately, causing unexpected truncation/rounding?
- ☒ Check each condition to be sure the proper relational and logical operators are used.
- ☒ If the test is an error-check, can the error condition actually be legitimate in some cases?
- ☒ Does the code rely on any implicit type conversions?

8. Exceptions

- ☒ Are all relevant exceptions caught?
- ☒ Is the appropriate action taken for each catch block?

9. Flow of Control

- ☒ In a switch statement is every case terminated by break or return?
- ☒ Do all switch statements have a default branch?
- ☒ Check that nested if statements don't have "dangling else" problems.
- ☒ Are all loops correctly formed, with the appropriate initialization, increment and termination expressions?
- ☒ Are open-close parentheses and brace pairs properly situated and matched?
- ☒ Do logical expressions evaluate to the correct true or false value?
- ☒ Do boolean functions return the correct value?

10. Files

- ☒ Are all files properly declared and opened?
- ☒ Are all files closed properly, even in the case of an error?
- ☒ Are EOF conditions detected and handled correctly?
- ☒ Are all file exceptions caught?